I. Amendments

A. In the Claims

This listing of claims will replace all prior versions and listings of claims in the application. Please cancel claims 1-3, 6-8 and 10, and amend claims 9, 11, 12, 13, 14, 15, 16, 18, 19, 20 and 21, and add new claim 22, as follows:

Listing of the Claims

1. (cancelled)

2. (cancelled)

3. (cancelled)

4. (cancelled)

5. (cancelled)

6. (cancelled)

7. (cancelled)

8. (cancelled)

9. (currently amended) A color sensor ~~sensing circuit~~ configured to sense a plurality of color components of light incident thereon, comprising:

~~a plurality of Red, Green and Blue color sensor circuits, each color sensor circuit comprising a first photodetector and being configured to receive incident light falling thereon, and to provide, in response to the incident light falling thereon, a first light photocurrent therefrom as a first output voltage, the first output voltage corresponding to an intensity of one of a Red, Green and Blue color component of the incident light as such intensity occurs under current operating temperatures;~~

~~a dark color sensor circuit comprising a second photodetector configured to provide a dark second photocurrent proportional to said current operating temperatures and output a second voltage corresponding to an offset voltage generated by said dark second photocurrent under said current operating conditions, and~~

~~at least one differential amplifier circuit operably coupled to said plurality of color sensor circuits and to said dark color sensor circuit and being configured to receive said first and second output voltages, remove, using said second output voltage, said dark color offset voltage from each of said first output voltages, and provide dark color offset voltage and current operating temperature compensated output signals corresponding to each of said color components to at least one differential output thereof, each of said output signals representing said intensity of said color component corresponding thereto, said differential amplifier circuit further comprising a difference amplifier configured to provide said compensated output signal to said differential output and further comprising a positive input and a negative input, a feedback resistor having a resistor value with one end coupled to said negative input and another end coupled to said differential output, a first resistor having said resistor value coupled in series with a color~~

~~sensor output configured to provide said first output voltage and said negative input, a second resistor having said resistor value coupled in series with a dark sensor output of said dark sensor circuit configured to provide said second output voltage and said positive voltage, and a third resistor having said resistor value coupled in series to said positive input and to ground, said resistor value approximating a resistance of the feedback resistor in said color sensor circuit.~~

a Red color sensor circuit comprising a Red photodetector configured to receive incident light thereon and provide a Red photocurrent therefrom in response to the incident light, the Red color sensor circuit being configured to provide a Red output voltage indicative of a Red intensity of a Red spectrum included in the incident light as the Red intensity occurs under a current operating temperature;

a Green color sensor circuit comprising a Green photodetector configured to receive incident light thereon and provide a Green photocurrent therefrom in response to the incident light, the Green color sensor circuit being configured to provide a Green output voltage indicative of a Green intensity of a Green spectrum included in the incident light as the Green intensity occurs under the current operating temperature;

a Blue color sensor circuit comprising a Blue photodetector configured to receive incident light thereon and provide a Blue photocurrent therefrom in response to the incident light, the Blue color sensor circuit being configured to provide a Blue output voltage indicative of a Blue intensity of a Blue spectrum included in the incident light as the Blue intensity occurs under the current operating temperature;

a single dark color sensor circuit comprising a dark photodetector configured to provide a dark photocurrent proportional to the current operating temperature, the dark color sensor circuit converting the dark photocurrent into a dark current offset voltage;

a multiplexer configured to receive the Red, Green and Blue output voltages as inputs thereto and to select one of the Red, Green and Blue output voltages as a selected color sensor output voltage;

an amplifier configured to receive the selected color sensor output voltage and the dark current offset voltage and to adjust the selected color sensor output voltage using the dark current offset voltage to cancel the contribution of the dark current offset voltage in the selected color sensor output voltage according to the current operating temperature and thereby provide a color sensor output signal.

10. (cancelled)

11. (currently amended) The color sensor ~~sensing circuit~~ of claim 9, wherein the amplifier is a differential amplifier. ~~each of said plurality of color sensor circuits further comprises:~~

~~a transimpedance amplifier including an output configured to provide said first output voltage, a negative input, and a positive input;~~

~~a feedback resistor with one end coupled to said output and another end coupled to said negative input; and~~

~~a compensation capacitor coupled in parallel with said feedback resistor to said output and said negative input;~~

~~wherein the first photodetector is configured to provide said first photocurrent corresponding to said color component, and further comprises a first photodetector input coupled to ground and to said positive input, and a first photodetector output coupled to said negative input.~~

12. (currently amended) The color sensor ~~sensing circuit~~ of claim 9, wherein the amplifier is a transimpedance amplifier~~said dark color sensor circuit further comprises:~~

~~a transimpedance amplifier including an output configured to provide said second output voltage, a negative input, and a positive input;~~

~~a feedback resistor with one end coupled to said output and another end coupled to said negative input;~~

~~a compensation capacitor coupled in parallel with said feedback resistor to said output and said negative input;~~

~~wherein the second photodetector is configured to provide said dark second photocurrent corresponding to said dark current, and further comprises a second photodetector input coupled to ground and to said positive input, and a second photodetector output coupled to said negative input.~~

13. (currently amended) The color sensor ~~sensing circuit~~ of claim 9, wherein the multiplexer selects Red as the selected color sensor output voltage ~~said color component comprises red.~~

14. (currently amended) The color sensor ~~sensing circuit~~ of claim 9, wherein the multiplexer selects Green as the selected color sensor output voltage~~said color component comprises green~~.

15. (currently amended) The color sensor ~~sensing circuit~~ of claim 9, wherein the multiplexer selects Blue as the selected color sensor output voltage~~said color component comprises blue~~.

16. (currently amended) A method of compensating for fluctuations in dark current arising from ~~fluctuations proportional to~~ changes in current operating temperature ~~variations~~ in a color ~~component color~~ sensor~~sensing circuit~~, comprising:

~~measuring, under current operating temperatures, a first voltage associated with a first intensity of a first color component of a first light input incident on a first light photodetector;~~

~~measuring, under said current operating temperatures, an offset voltage associated with a dark photocurrent provided by a dark second photodetector;~~

~~subtracting said offset voltage from said first voltage thereby to provide a dark color offset voltage and current operating temperature compensated first final output signal representative of said first intensity of said first color component, and~~

~~matching a resistor value for resistors in a differential amplifier circuit to a resistance of a feedback resistor in a circuit configured to measure said first voltage, wherein said differential amplifier circuit is configured to receive said first voltage and said offset voltage and outputs therefrom said final output signal.~~

generating a Red photocurrent with a Red photodetector in response to incident light falling on the Red photodetector and providing a Red output voltage indicative of a Red intensity of a Red spectrum included in the incident light as the Red intensity occurs under a current operating temperature;

generating a Green photocurrent with a Green photodetector in response to incident light falling on the Green photodetector and providing a Green output voltage indicative of a Green intensity of a Green spectrum included in the incident light as the Green intensity occurs under the current operating temperature;

generating a Blue photocurrent with a Blue photodetector in response to incident light falling on the Blue photodetector and providing a Blue output voltage indicative of a Blue intensity of a Blue spectrum included in the incident light as the Blue intensity occurs under the current operating temperature;

generating a dark photocurrent proportional to the current operating temperature and converting the dark photocurrent into a dark current offset voltage;

providing the Red, Green and Blue output voltages as separate inputs to a multiplexer, and selecting, with the multiplexer, one of the Red, Green and Blue output voltages as a selected color sensor output voltage;

providing the selected color sensor output voltage and the dark current offset voltage as inputs to an amplifier;

adjusting, in the amplifier, the selected color sensor output voltage using the dark current offset voltage to cancel the contribution of the dark current offset voltage in the selected color sensor output voltage according to the current operating temperature and thereby provide a color sensor output signal.

17. (cancelled)

18. (currently amended) The method of claim 16, wherein the amplifier is a differential amplifier.~~further comprising:~~

~~measuring, under said current operating temperatures, a second voltage associated with a second intensity of a second color component of a second light inputincident on a third photodetector; and~~

~~subtracting said offset voltage from said first voltage and said second voltage thereby to provide dark color offset voltage and current operating temperature compensated second final output signal representative of the second intensity of said second color component.~~

19. (currently amended) The method of claim 16, wherein the amplifier is a transimpedance amplifier.~~said first color component comprises red.~~

20. (currently amended) The method of claim 16, wherein the multiplexer selects Red as the selected color sensor output voltage~~said first color component comprises green~~.

21. (currently amended) The method of claim 16, wherein the multiplexer selects Green as the selected color sensor output voltage~~said first color component comprises blue~~.

22. (new) The method of claim 16, wherein the multiplexer selects Blue as the selected color sensor output voltage.